DOCUMENT RESUME

ED 133 072 PS 009 020

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TITLE The Relation of Cognitive Style to Social and Self-Regulatory Behaviors in Naturalistic Settings.
PUB DATE 13 Jul 7(
NOTE 16p.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Classroom Environment; *Conceptual Tempo; *Educationally Disadvantaged; Preschool Children; *Preschool Education; Research; *Self Control; *Social Behavior
IDENTIFIERS Project Head Start; *Reflectivity Impulsivity

ABSTRACT

This study examines the relation of reflectivity-impulsivity to naturally occurring social and self-regulatory behaviors of urban, disadvantaged preschool children. Correlations between the Kansas Reflectivity-Impulsivity Scale for Preschoolers (KRISP) and classroom behavior were computed for two groups of Head Start classes (121 children, ages 2 to 5) that differed on the amount of adult-imposed classroom structure. Classroom observations were collected using a time sampling procedure during a baseline period of approximately three months, and during a two-month period in which experimental treatments were introduced. The KRISP was administered during the last month of baseline observation and at the end of the experimental period. Results seem to indicate that correlations between impulsivity and classroom behavior were limited to the low structure classrooms. In the low structure classes, impulsive children were less aggressive, less assertive, and less likely to show understanding of others or to engage in prosocial behavior such as cooperation, helping, and sharing than their reflective peers. Impulsive children were higher than reflectives on two indices of self-regulation: responsibility during pick up time and waiting patiently during delays. (Author/SB)

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ED133072

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The Relation of Cognitive Style to Social and Self-regulatory Behaviors in Naturalistic Settings

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PS 009020

7/13/76 IFS 6355:AHS

Abstract

The relation of reflectivity-impulsivity to naturally occurring social and self-regulatory behavior of urban, disadvantaged preschool children was examined. Correlations between the Kansas Reflectivity-Impulsivity Scale for Preschoolers and classroom behavior were computed for two groups of Headstart classes that differed on the amount of adult-imposed classroom structure. In the low structure classes, impulsive children were less aggressive, less assertive, and less likely to show understanding of others or to enggge in prosocial behavior such as cooperation, helping, and sharing than their reflective peers. Impulsive children were higher than reflectives on two indices of self-regulation: responsibility during pick up time and waiting patiently during delays.

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Reflection-impulsivity is a dimension of conceptual tempo that has generated considerable research interest and controversy in the last ten years. On tasks where time and errors are negatively correlated, there are moderately stable individual differences among children in the degree to which they perform rapidly with many errors (impulsivity) or slowly with few errors (reflectivity).

Conceptual tempo, along with other cognitive style variables, falls theoretically somewhere between cognition and personality. Nevertheless, most of the research on reflection-impulsivity has been concerned with its relation to cognitive performance. There is fairly substantial evidence that reflective children are superior to impulsives on visual analysis skills, school achievement, and a variety of standard laboratory tasks (see Wright & Vlietstra, in press).

There is less evidence concerning possible personality or social behavior correlates of reflectivity-impulsivity. In one study of middle class preschool children, reflective children were rated by teachers as less aggressive and more empathic, considerate of peers and better able to delay gratification than impulsives (Block, Block, & Harrington, 1974). In studies of elementary school children, correlations typically have been weak or non-existent. Although reflective children are sometimes less sociable (Kagan & Kogan, 1970), no relationship

with extraversion or impulsivity was found in one recent investigation (Bentler & McClain, 1976). In another, reflectives scored as less assertive and more tough-minded than impulsives, but they did not differ on a variety of other personality variables including being outgoing, excitable, or shy (Salkind & Wright, 1976).

Reflectives do appear to have longer attention spans, engage in more task persistence, make transitions from one task to another more readily, take more initiative and show less teacher dependency (Kagan & Kogan, 1970; Wright & Vlietstra, in press). All of the studies reviewed were based on either teacher ratings or self-report personality inventories; thus, they assessed more or less stable, trait-like characteristics, but did not provide for situational variability in children's behavior.

In the present study the relation of reflection-impulsivity to directly observed social and self-regulatory behavior of urban, disadvantaged preschool children was examined.

On the basis of existing theory and earlier research, we expected impulsive children to show less prosocial behavior to peers, more aggression, and less self-regulation. Within the broad category of prosocial behavior, we expected that those actions that require empathy or social perceptiveness would be especially strongly related to impulsivity because impulsives are less attentive to subtle cues and less skilled at analyzing their environments (Wright & Vlietstra, in press).

Method

Subjects.

Subjects for the study were 121 children enrolled in Head Start programs in a large city. The mean age was 4 years 2 months with a range

from 2 years 4 months to 5 years 4 months. All children resided in families whose incomes met the requirements of the Head Start program (maximum of $4300 for a family of four). Both black and white children were included in the sample.

Measures of reflection-impulsivity and classroom behavior.

The data for the present study were collected as part of a field experiment testing the effects of television on natural behavior (Friedrich & Stein, 1975). All children were observed in their classrooms during a baseline period of approximately three months and during a two-month period in which experimental treatments were introduced. The Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP) (Wright, 1971) was administered to each child during the last month of the baseline period and at the end of the experimental period. The baseline behavior observations and KRISP scores were used for the present study.

Reflection-Impulsivity. The KRISP is a match-to-sample test for preschool children similar to the Matching Familiar Figures Test designed for elementary school children. Satisfactory levels of reliability and validity have been established on samples from widely varying geographic areas (Wright, 1971). There are two forms, each consisting of ten items. In the present study, forms were counterbalanced so that approximately half of the subjects received each form in the baseline administration.

The usual scores derived from tests of impulsivity are latency of response and average number of errors. Impulsivity is defined as a pattern of short latencies and high errors, so neither score alone is a good index. Wright (1974) has recently developed a model that

permits derivation of a single Impulsivity score incorporating both errors and latency (standard score for errors minus standard score for latency divided by 2). High impulsivity scores indicate the impulsive end of the continuum; low scores indicate reflectivity. A second score, efficiency, (standard score for errors plus standard score for latency divided by 2) is uncorrelated with Impulsivity. High scores indicate slow, inaccurate performance; low scores denote fast, accurate performance. These derived scores overcome some of the problems that are inherent in earlier scoring methods (Ault, Mitchell, & Hartman, 1976; Block et al., 1974.)

The KRISP was administered to each child by a female examiner of the same ethnic group as the child. Examiners were undergraduate students. Testing was carried out in small rooms near the children's classrooms.

Classroom Behavior

Most of the behavior observations were collected through a time-sampling procedure. Each child was observed for five-minute blocks of time using a detailed set of behavior categories. The average amount of time that each child was observed over the three month period was slightly over one hour. The behavior categories were refined and combined into those categories presented in Table 1. In addition, a point sampling technique was used to rate effectiveness during organized

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Table 1 about here

"circle time" activities and to rate participation in picking up at the end of free play.

Finally, one observation category yielded information about teachers' methods of structuring their classrooms and relating to the children. Classrooms in the sample differed widely in the amount of time spent in adult-structured group learning activities. In addition, teachers in the classes designated as low structure were warmer and less punitive than those in the high structure classes. An earlier analysis indicated that classroom structure was related to some categories of social and self-regulatory behavior, but not to impulsivity scores (Huston-Stein, Friedrich, & Susman, 1976). Therefore, classroom structure was examined as a possible intervening variable that might affect the relation of impulsivity to behavior.

Results

Correlations between KRISP scores and classroom behavior, with age partialled out, were computed for the whole sample and for the two subsamples formed when classes were divided into those with high and low levels of adult-imposed structure. These correlations appear in Table 2.

Table 2 about here

Although there were some correlations for the total sample that differed significantly from zero, the separation of classes by structure level indicated that the correlations between impulsivity and classroom behavior were limited almost entirely to the low structure classes. In those classes, impulsive children were less aggressive (both prosocial and hostile), less assertive (on demandingness to peers and verbalization of feeling), and less likely to show understanding of others or to engage in prosocial behavior such as cooperation, helping, and sharing.

Two categories of self-regulation, responsibility during pick up time and waiting patiently during delays, were positively related to impulsivity in the low structure classes. There was a nonsignificant tendency for impulsive children to show more task persistence, but they did not differ from reflectives in attention during circle time. In the high structure classes, however, impulsive children were less attentive during circle time than reflectives. As this was the only significant correlation for the high structure classes, it cannot be given much weight even though it was consistent with our predictions. The Efficiency score did not relate to classroom behavior. This finding indicates that the correlations are a function of cognitive style rather than general cognitive efficiency.

Discussion

One caution about generalizing these findings needs to be introduced. The mean impulsivity scores for this sample were high in comparison to the scores of middle-class children, so they may not represent the full range of reflectivity. Obviously, one cannot necessarily generalize to other populations, particularly given the situation-specificity of these findings indicated by the classroom structure differences.

In fact, one major question to be raised is why the correlations occurred in the low structure classes, but not the high structure classes. This difference could be a function of population differences because the two types of classes were located in different centers in different parts of the city, and they differed in ethnic composition. The high structure classes were predominantly white; the low structure classes were predominantly black. Nevertheless, it appears more likely that these findings are due to differences in classroom organization. The greater freedom and opportunity for independent activity in the

low structure classes may have permitted individual differences among the children to emerge more readily than in classes where adults structured much of the children's time and activity. This interpretation is supported by the fact that the later television viewing treatments had more effect in the low structure classes than in the high structure classes (Friedrich & Stein, 1975).

In the low structure classes, the social behavior correlates of impulsivity were only partly consistent with our predictions. As expected, reflective children engaged in more prosocial behavior and showed more understanding of others, but they were also more aggressive and more assertive than impulsive children. They were, in fact, higher on almost every kind of social behavior with peers that we measured. This result is less surprising given the fact that aggression was positively correlated with prosocial behavior. Similar positive correlations have been found in most naturalistic studies of prosocial behavior (see Friedrich & Stein, 1973; Stein & Friedrich, 1972). Thus, the higher levels of aggression shown by the reflective children appear to indicate their greater overall involvement with peers and may indicate that they are more dominant in their peer groups than impulsive children. Moreover, aggression and assertiveness may be particularly adaptive and successful techniques of peer interaction in the urban, poor population from which these children came.

The correlations of impulsivity with self-regulatory behavior are also contrary to initial expectations. Impulsive children were higher than reflectives on two indices of self-regulation: responsibility in pick up time and waiting patiently during delays. The latter finding is consistent with an earlier report that impulsive children spent more time in transition between activities. Both of these behaviors

may reflect greater conformity to adult expectations by impulsives. The absence of differences in spontaneous social interaction with adults suggests impulsives are not more dependent on adults.

The picture of the impulsive child that emerges from these results is one of passivity. These impulsive children were less socially active, particularly less assertive and aggressive than more reflective children. They were not more dependent on adults. They were also more likely to put away materials quickly under adult supervision at the end of free play. Even the latter finding may indicate that they were less involved in their play activities than reflective children when pick up time arrived. One wonders whether their "impulsivity" on the KRISP may have resulted from a kind of passive non-involvement that led them to be careless.

Whatever the reasons for the associations found in this study, it is clear that impulsive conceptual tempo cannot be equated with behavioral impulsivity, at least for the economically disadvantaged population studied. The cognitively impulsive children were generally passive and conforming in their behavior; the cognitively reflective children were active, prosocial, aggressive, and assertive with their peers and less conforming to adult expectations.

References

Ault, R. L., Mitchell, C. & Hartmann, D. P. Some methodological problems in reflection-inpulsivity research. Child Development, 1976, 47, 227-231.

Bentler, P. M. & McClain, J. A multitrait-multimethod analysis of reflection-impulsivity. Child Development, 1976, 47 218-226.

Block, J., Block, J. H., & Harrington, D. M. Some misgivings about the Matching Familiar Figures test as a measure of reflection-impulsivity. Developmental Psychology, 1974, 10, 611-632.

Friedrich, L. K. & Stein, A. H. Aggressive and prosocial television programs and the natural behavior of preschool children. Monographs of the Society for Research in Child Development, 1973, 38 (4, Serial No. 151).

Friedrich, L. K., & Stein, A. H. A naturalistic study of the effects of prosocial television and environmental variables on the behavior of young children. Final report submitted to the Office of Child Development, Grant No. OCD-CB-340, July, 1975.

Huston-Stein, A., Friedrich, L. K., & Susman, E. J. The relation of classroom structure to the social behavior, imaginative play and self-regulation of economically disadvantaged children. Unpublished manuscript, The Pennsylvania State University, 1976.

Kagan, J. & Kogan, N. Individual variations in cognitive processes. In P. Mussen (Ed.), Carmichael's manual of Child psychology. Vol. 1. New York: Wiley, 1970.

Salkind, N. J. & Wright, J. C. Reflection-impulsivity and cognitive efficiency: An integrated model. Unpublished manuscript, University of Kansas, 1976.

Stein, A. H. & Friedrich, L. K. Television content and young children's behavior. In J.P. Murray, E. A. Rubinstein, & G. A. Comstock (Eds.), Television and social behavior. Vol. 2. Television and social learning. Washington: Government Printing Office, 1972.

Wright, J. C. The Kansas reflection-impulsivity scale for Preschoolers (KRISP). St. Louis: CEMREL, 1971.

Wright, J. C. Reflection-impulsivity, hyperkinesis, and information processing from 3 to 9 years of age. Paper presented at the annual meeting of the American Psychological Association, New Orleans, August, 1974.

Wright, J. C. & Vlietstra, A. G. Reflection-impulsivity and information processing from three to nine years of age. In M. Fine (Ed.), Intervention with hyperactive children. Springfield, Ill.: Charles Thomas, in press.

Table 1

Definitions of Observation Categories

Behavior Category	Reliability[a]	Definition
Hostile aggression	.61	Physical attacks on another person, verbal attacks such as name calling, derogatory remarks, and interfering with another's activities.
Prosocial aggression	.69	Tattling, defending property without counter-attack, commands and enforcing rules.
Total aggression	.77	Sum of hostile and prosocial aggression and aggression toward objects.
Demandingness to peers	.79	Commands, verbal aggression, asking for help or for objects, stating wants.
Verbalization of feeling	.80	Verbalizing wishes, desires, asking for materials, or help, talking about other's wants or needs, issuing commands.
Prosocial behavior to peers	.73	Cooperation, helping, understanding feelings, showing consideration, affection, praise, comfort, sympathy.
Understanding others	.88	Showing consideration, understanding, giving comfort, sympathy, praise, affection.
Positive social interaction	.81	Any form of verbal interchange that is positive or neutral (not angry) and is more than fleeting. Statements to a peer that call attention

		to one's actions or accomplishments. Showing consideration, giving sympathy, affection, praise, giving reasons for own behavior.
Social interaction with adults	.80	All forms of verbal interchange with adults that are positive or neutral in affect and are more than fleeting.
Task persistence	.60	Continually concentrating on an activity with little or no distraction or making repeated efforts to accomplish a task where difficulty is encountered.
Waiting patiently during delays	.60	Waiting patiently, without being aggressive or demanding, when something child wants is not immediately available.

[a]Correlations based on 253 simultaneous 5-minute observations of 55 children by pairs of observers.

Table 2
Correlations of Impulsivity Scores with Classroom Behavior
(Age Partialled Out)

Behavior Category	Low Structure Classes (69df)				High Structure Classes (48df)			
	Latency	Errors	Impulsivity[a]	Efficiency[b]	Latency	Errors	Impulsivity[a]	Efficiency[b]
Aggression								
Hostile aggression	16	-29*	-28*	-09	-04	-01	04	-01
Prosocial aggression	13	-24*	-26*	-07	16	-02	-08	11
Total aggression	17	-33*	-33*	-11	03	02	02	06
Assertiveness								
Demandingness to peers	24*	-21	-30*	03	-25	-26	05	00
Verbalization of feeling	19	-26*	-30**	-04	13	07	-01	17
Prosocial behavior								
Prosocial behavior to peers	16	-24*	-28*	-04	-13	18	26	02
Understanding others	12	-36**	-32**	-16	01	01	05	01
Positive social interaction with peers	10	-18	-18	-05	02	11	07	10
Social interaction with adults	07	07	10	00	23	03	12	23
Self-regulation								
Task persistence	-20	12	18	-01	08	-12	-14	-02
Waiting patiently during delays	-13	25*	24*	-09	0	0	04	-03
Circle time attention	-18	-01	10	-14	01	-44*	-25	-26
Pick up time responsibility	-39**	17	34**	-15	15	-01	-10	14

*p < .05
**p < .10

[a]Impulsivity = (T errors - T latency)/2. High scores denote high impulsivity.

[b]Efficiency = (T errors + T latency)/2. High scores denote low efficiency.